

Tab H. "Cross-reference table"**Claims using this term: claims 21 and 29 of the '516 patent****Lawson remaining terms and phrases 10**

<u>Lawson's Proposed Definition</u>	<u>Lawson's Proposed Definition</u>
A table including reference or identification codes used to link vendor items by catalog number between two or more different vendors determined by a Distributor to be equivalent	<p>"21. An electronic sourcing system comprising: . . . wherein said determination system includes a cross reference table matching an identification code from a first located item with a second identification code from a second located item." ('516 patent, claim 21)</p> <p>"29. An electronic sourcing system comprising: . . . a cross-reference table linking a vendor item catalog number from said vendor catalog with an item catalog number from said predetermined third party." ('516 patent, claim 29)</p> <p>"When a customer asks for products by manufacturer part number or a competitor's 30 catalog number, the CSR has access to cross-reference files, as earlier described, either maintained on the local host or maintained on the Distributor host computer 210." ('516 patent, Detailed Description of the Invention, 17:34-38)</p> <p>". . . and cross-references from the Distributor's catalog number to its corresponding vendor's part (catalog) number and to similar corresponding catalog numbers of other vendors (suppliers or distributors) for the same Product." ('516 patent, Detailed Description of the Invention, 5:9-13)</p> <p>"One such system is the Fisher Scientific Requisition and Inventory Management System ('Fisher RIMS'), described U.S. Pat. No. 5,712,989, filed Apr. 2, 1993 and assigned to Fisher Scientific Company of Pittsburgh, Pa., the disclosure of which is incorporated herein by reference." ('683 patent, Background of the Invention, 1:13-17)</p>

	<p>“The Host Cross-Reference Table includes, for each item regularly stocked or supplied by the Distributor (i.e. items of product type 01 or 03) a list of the corresponding part numbers of Distributor’s vendor and other distributors (which are identified by a competitor number) for items which have been determined to be equivalent. This relational database is created by the Distributor by, for example, reviewing the catalogs of other distributors and determining which items are equivalent to items in the Distributor catalog.” (’989 patent (incorporated by reference in the patents-in-suit), Detailed Description of the Invention, 32:14-24)</p>
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being generally equivalent, and wherein a selection of one identification code from one of said first and second catalogs provides the other identification code from the other of said catalogs.

10. An electronic sourcing system as recited in claim 9, wherein said first identification code is identical to said second identification code.

11. An electronic sourcing system as recited in claim 9, wherein at least of one of said first and second catalogs includes said first and second identification codes.

12. An electronic sourcing system as recited in claim 9, wherein said selection includes a comparison of said one of said first and second identification codes with a cross-reference table listing both of said identification codes as being generally equivalent.

13. An electronic sourcing system as recited in claim 9, wherein a user selects one of said first and second identification codes, lacks access to said catalog corresponding to said selected identification code, but is given access to the other said catalog corresponding to said non-selected identification code.

14. An electronic sourcing system as recited in claim 9, wherein a user selects one of said first and second identification codes, and has access to both said first and second catalogs.

15. An electronic sourcing system as recited in claim 9, wherein said first and second identification codes correspond to a part number.

16. An electronic sourcing system comprising:

at least two product catalogs containing data relating to items such that an item in a first catalog is generally equivalent with an item in a second catalog; and

converting means for converting data relating to said item from said first catalog to data relating to said item from said second catalog.

17. An electronic sourcing system as recited in claim 16, wherein at least one catalog database contains said data from each of said catalogs, and said converting means includes a non-catalog database containing a cross-reference table such that use of a reference code corresponding to an entry in said cross-reference table links said item from said first catalog to data relating to said item from said second catalog.

18. An electronic sourcing system as recited in claim 16, wherein one or more catalog databases contain said data from each of said catalogs, and said converting means including one or more catalog databases including an identical reference code corresponding to said data from said first catalog and said data from said second catalog.

19. An electronic sourcing system as recited in claim 16, wherein said first catalog may be searched separately from said second catalog.

20. An electronic sourcing system as recited in claim 19, wherein a user lacks access to said first catalog and has access to said second catalog, such that a request for an item in said first catalog provides said data from said second catalog.

21. An electronic sourcing system comprising:

a requisition module including data fields, user-generated criteria entered into at least one of said data fields to generate at least partial criteria corresponding to a desired item;

a catalog collection searching module, said searching module including a collection of catalogs of items stored in an electronic format, a catalog selection criteria used to select less than said entire collection, said searching module being used to generate additional search-module criteria for said data fields of said requisition module;

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a multiple purchase order generation module, said purchase order generation module creating multiple purchase orders from a single requisition created with said user-generated criteria and said search-module criteria;

wherein each of at least two catalogs include a generally equivalent item from a different source, said requisition module working in combination with said catalog searching module to determine multiple sources for said item;

wherein said multiple sources is limited by said catalog searching module providing a match according to said user-generated criteria, said search-module criteria and a determination system that located items are generally equivalent; and

wherein said determination system includes a cross reference table matching an identification code from a first located item with a second identification code from a second located item.

22. An electronic sourcing system as recited in claim 21, wherein said determination system includes an identical identification code for each of said located items.

23. An electronic sourcing system, as recited in claim 21, wherein said requisition module generates a preferred requisition based on at least one of product availability and user preferences in accordance with a determination of multiple sources for a desired item.

24. An electronic sourcing system as recited in claim 21, wherein less than said catalog selection criteria is determined by at least one of said user-generated criteria or user characteristics.

25. An electronic sourcing system as recited in claim 24, wherein said user characteristics include a listing of catalogs from which a user is allowed to purchase.

26. An electronic sourcing module as recited in claim 21, wherein said requisition module uses at least one pre-determined rule to select which of multiple sources to use for said desired item.

27. An electronic sourcing system as recited in claim 26, wherein said pre-determined rule relies on item availability.

28. An electronic sourcing system as recited in claim 26, wherein said pre-determined rule relies on a hierarchy of preferred sources.

29. An electronic sourcing system comprising:

a collection of catalogs of items stored in an electronic format;

a first set of pre-determined criteria associated with said collection of catalogs;

a second set of pre-determined criteria associated with items from each of said catalogs;

a catalog selection protocol, said catalog selection protocol relying on said first set of pre-determined criteria to select less than said entire collection of catalogs, and including matching a vendor identification code with a subset of said collection of catalogs, wherein said subset of catalogs includes both a vendor catalog from a predetermined vendor and a second catalog from a predetermined third party;

a search program, said search program relying on said second set of criteria to select specific items from said catalogs determined from said catalog selection protocol; and

a cross-reference table linking a vendor item catalog number from said vendor catalog with an item catalog number from said predetermined third party.

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to build the Requisition Item Table, but then calls the Distributor CSR or Customer purchasing employee to source and accept the requisition.

As shown in FIG. 1B, the present invention also has application to Distributor's regional customer service locations where a large number of CSRs may be placing orders directly on Distributor's host computer 210 for thousands of different customers who call in. In that environment, search program 250, which preferably comprises TV/2 search program 250, and catalog databases 236 are stored on file server 200. In this environment, file server 200 is a large personal computer, a work station or a mini-computer such as an IBM AS/400. Alternatively, the server 200 and a minicomputer (such as an IBM AS/400) can be independently connected to each local computer 200. Each CSR has a local personal computer 220 having a monitor 222, a keyboard 224 and a printer 226. Local computer 220 is provided with programs including requisition/purchasing program 240, Shell program 252 and a graphic user interface 254 (preferably EASEL Workbench program 254 for OS/2) for listing items. One or more of these may be copied from server 220 when needed. Work-in-progress requisitions 260 are established for each customer and are attached to graphic user interface 254. Server 200 maintains complete requisitions 242, in a manner similar to the manner in which local computer 20 maintains requisition databases 42 in the embodiment shown in FIG. 1A.

Normally, in such an environment, the CSR creates Order lists for customers by entering Distributor catalog numbers into graphic user interface 254 and connecting to the Distributor mainframe 210 for price and availability. For this purpose, each local computer is connected to host computer 210 via a phone/dataline and either a gateway or a mini-computer acting as a local host. When a customer asks for products by manufacturer part number or a competitor's catalog number, the CSR has access to cross-reference files, as earlier described, either maintained on the local host or maintained on the Distributor host computer 210.

Appropriate Distributor catalogs and manufacturer catalogs then are consulted, using TV-2 search program 250 and proper selection of Distributor catalogs and of catalogs and bulletins from manufacturers whose products Distributor regularly sells. Catalogs and bulletins are contained in catalog database 236. The resultant lists of products are then transferred by Shell program 252 to a work-in-progress requisition 260, and then entered from graphical user interface 254 directly onto Distributor's mainframe computer 210 as orders from the applicable customer to Distributor. The CSR, knowing which items are available from which Distributor warehouse and direct-shipping supplier, then may divide the customer's requested items into multiple orders, so as to assure that each order is completely filled by a single shipment. In this regional environment, file server 200 or the minicomputer acting as local host can maintain files of completed requisitions 242 which can be subsequently used for generating reports for customers in the region. Reports can be generated either from such local data or from data periodically downloaded to the local host from Distributor's host computer 210.

Another environment where the present invention can be used is in Distributor's purchasing department. The item lists created in that environment can include lists of items Distributor does not regularly stock or purchase, but for which particular customers indicate a requirement to buy. The file server 200 in that environment contains TV-2 search program 250, EASEL graphical user interface 254 and multiple catalog databases 236 containing catalogs similar to

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the Fairmont and NIST catalogs described above for the embodiment of FIG. 1A. The Distributor purchasing employee can receive by phone or via Distributor's host computer 210 requests for items not shown on Distributor's host databases either as regular products (type 03) or third party items purchased for particular customers on a regular basis (type 07 items). Transmitting certain such requirements to the applicable Distributor purchasing employee can be a function of the inventory sourcing routines of host computer, or may be directed by the Distributor CSR interfacing with the customer.

The Distributor purchasing employee can search appropriate catalogs using TV-2 search program 250, and can transfer the "Items Selected" to a product list in EASEL interface 254. The resultant list might display, for example, supplier part number, supplier, list price, product and catalog page, with access to other fields such as complete description (up to 500 characters). The Distributor purchasing employee can then either forward the information to the CSR, customer end user or customer purchasing employee who requested the item (to confirm that the requirement is being met) or contact the supplier to confirm pricing and availability. Once responses from either or both have been obtained, the Distributor purchasing employee can use the item list in EASEL interface 254 to create one or more of the following purchase orders:

1. an order from the customer to the supplier (an Administrative Purchase);
2. an order from the customer to Distributor (for a type 07 product); and
3. an order from the Distributor to the supplier (usually providing for direct shipment from the supplier to the customer or to a JIT site maintained by Distributor for the customer).

From the foregoing description, it should be apparent that the network arrangements of FIG. 1B can be used to apply the present invention in a variety of contexts. The context will dictate which catalog databases 236 are provided on file server 200: in the regional CSR environment, Distributor's catalogs can be present with a variety of catalogs and bulletins from manufacturers that Distributor regularly represents and a limited selection of outside suppliers; and in the Distributor purchasing environment, the number of outside supplier catalogs will be increased. The number of client (local) computers 220 and the number and size of catalog databases 236 will help dictate what size file server 200 is required. The operating environment (regional CSR site, on-site CSR, on-site CSR networked with Customer end users and with purchaser personnel or Distributor purchasing site) will also affect the catalog databases 236 included, file server 200 size and requisition/purchasing program 240 used. In some situations (e.g., purchasing) each client computer has an independent copy of requisition/purchasing program 240; in others (e.g., on-site CSR) a single copy of the requisition/purchasing program 240 is maintained with associated local databases on the server 200. Where the requisition/purchasing program 240 and local databases are maintained on file server 200, the local database is updated after each use for the benefit of subsequent users. For example, in an environment using Fisher RIMS for requisition/purchasing program 240, if a NIST standard is selected using TV-2 search program 250 and ordered using Fisher RIMS 240 (as either a type 07 purchase from Distributor or a type 05 administrative purchase from NIST), that item is available in the applicable database for subsequent requisitions. For example, a NIST standard ordered as a type 05 item will be stored in the local database

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tor site is also provided, as shown in FIG. 1A. Host computer 10 controls all inventory, pricing and requisitioning operations of the Distributor's regularly stocked items using host pricing and inventory databases 11. Host pricing and inventory databases 11 may include such information as: descriptions of the items and the quantities thereof available at a particular Distributor warehouse and at other Distributor warehouses; item records for each Product regularly sold by the Distributor; discount records by Customer; and cross-references from the Distributor's catalog number to its corresponding vendor's part (catalog) number and to similar corresponding catalog numbers of other vendors (suppliers or distributors) for the same Product.

Host computer 10 and local computer 20 are preferably linked point-to-point or in a network employing the formats and protocols of IBM's System Network Architecture ("SNA"). Host computer 10 can be substantially any mainframe or minicomputer capable of running the desired programs and conducting the required communications. Preferably, host computer 10 is a mainframe computer, such as an IBM Model 3090, running the MVS operating system, the MVS-CICS application and a Virtual Telecommunication Access Method communications network.

As shown in FIGS. 1C and 2, interface 60 is also a part of electronic sourcing interface system 5. Interface 60 communicates shared data between requisition/purchasing system 40 and search program 50. Interface 60 is preferably based upon the dynamic data exchange ("DDE") protocol provided by OS/2 operating system 32. As shown in FIG. 2, interface 60 preferably includes three linking programs to interface requisition/purchasing system 40 and search program 50: ESRC program 70, ESCP program 80 and DDE LINK 90.

A typical data exchange may begin with requisition/purchasing system 40 (which, in the illustrated embodiment, is the Fisher RIMS system) requesting information from catalog database 36 via search program 50. Once a search by search program 50 has been completed, the selected information will be communicated to requisition/purchasing system 40 via interface 60.

Alternatively, if the search of catalog database 36 is initiated from search program 50, the information selected from the search is returned to requisition/procurement system 40 via interface 60.

The start up of electronic sourcing system 5 (FIG. 1A) may be user-initiated or automatically started when the operating system, preferably OS/2 system 32, is brought up on local computer 20. An application-name string 61 must be identified to label interface 60. As shown in FIG. 1C, electronic sourcing system 5 by convention will use "TV2V123," "TV2V124," "TV2V125," etc. as application names 61 supporting the user's requesting service.

Preferably, application names 61 correspond to virtual terminal sessions that exist in the CICS system 34 of requisition/purchasing system 40. There will be a one-to-one correspondence between applications started (such as Shell 52) and CICS virtual terminals in use at a location of requisition/procurement system 40 (such as REQI program 44A). Local computer 20 will query OS/2 operating system 32 to determine the next application-name string 61 to create at start-up. The application-name strings 61 will be created in sequence with V123 being created first, V124 created second, etc. Each application will create only one application name-string 61 to support its user in the CICS environment 34.

If the Fisher RIMS system has been selected as requisition/purchasing system 40, and the TV/2 search pro-

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gram has been selected as search program 50, CICS OS/2 applications 34 must share a workstation with a TV/2 search program 50.

The data passed by interface 60 preferably comprise all or a subset of the following twelve fields: vendor name, vendor number, vendor part (catalog) number, product description, bid price, list price, keyword, page number, quantity, unit, catalog text, and catalog images. Because of the amount of data for catalog images present in database 36 and viewed on monitor 22, these data are usually not passed via interface 60. Any of the above-listed fields may be filled by requisition/purchasing system 40 prior to requesting a search of catalog database 36 by search program 50. However, requisition/purchasing system 40 is not required to pass any data to search program 50. If a field is not passed, that field will be filled with spaces. The fields that are filled with data will assist search program 50 in executing its first search against a specific catalog contained in catalog database 36.

A search priority exists when more than one field is provided by requisition/purchasing system 40. The priority is as follows: (1) part (catalog) number; (2) keyword; and (3) page number. The search will start with priority (1) and proceed through priority (3) in sequence until a search produces products matching the search criteria. At that time, the search will return the matching product information to requisition/purchasing system 40 and stop at the highest priority resulting in a match.

The operation of electronic sourcing system 5 of the present invention will now be more particularly described in the context of FIGS. 1A, 1C, 2 and 3. In FIGS. 2 and 3, the rectangles represent data screens as well as programs associated with those data screens. The rounded rectangles represent programs not associated with data screens such that, while these programs are running, the prior data screen may remain visible without, necessarily, being operational for the input of data. The programs associated with the data screens enable the user of local computer 20 to display and modify the contents of various tables associated with particular data screens. The following description illustrates the use of the Fisher RIMS system as requisition/purchasing system 40, and the TV/2 search program as search program 50. However, it will be understood that the present invention is not limited to such system or program.

Preferably, a user will start the electronic sourcing system 5 from Fisher RIMS system 40. Requisitioning on Fisher RIMS system 40 in context of the electronic sourcing system 5 of the present invention is illustrated in pertinent part in FIG. 3 (and is fully described in application Ser. No. 08/042,168, now U.S. Pat. No. 5,712,989). As data (e.g., Account Number, Requisition Number and Stock Numbers) associated with a single requisition are entered through the various data screens on local computer 20, that computer creates a set of Requisition Tables (including a Requisition Item Table 46, shown in FIG. 1C) for that particular requisition. The Requisition Tables are stored in Requisition databases 42A (shown in FIG. 1A), and can be accessed by local computer 20 using the Requisition Number to find the desired table.

The first step in creating a requisition in Fisher RIMS system 40 involves entry by the user of information in the Order Header program 44D (shown in FIG. 1A), which has an associated Order Header data screen 100 (FIG. 3). A sample of an actual Order Header data screen 100 is set forth in Appendix I. The user enters an Account Number, which generally causes the correct name and address associated with that Account Number to be entered into the appropriate

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ELECTRONIC SOURCING SYSTEM AND METHOD**BACKGROUND OF THE INVENTION**

This invention relates to systems and methods for interfacing product information, such as is typically found in vendor catalogs that are provided to customers, and requisition/purchasing systems and methods that may use the results of searches of product information.

There are a number of known requisition/purchasing systems that manage and process requisitions and purchase orders. One such system is the Fisher Scientific Requisition and Inventory Management System ("Fisher RIMS"), described U.S. Pat. No. 5,712,989, filed Apr. 2, 1993 and assigned to Fisher Scientific Company of Pittsburgh, Pa., the disclosure of which is incorporated herein by reference. As its title suggests, Fisher RIMS can also manage inventory. In the Fisher RIMS system, requisition records are created from a real-time interaction between a host computer (generally a mainframe) and a local computer (generally at a customer site), with each computer using data from its own respective database of inventory in conjunction with information entered by a customer service representative operating the local computer. By accessing its respective database, each computer can build and transmit to the other computer communications blocks of data relating to a particular requisition of an item in inventory (or to the management of the inventory itself). The other computer can then use the received data to continue processing of the requisition. Thus, requisition records are created from a real-time interaction between the host and local computers, with each computer using data from its respective database in conjunction with information entered by a customer service representative operating the local computer.

Other requisition/purchasing systems can be grouped broadly into four classes. First, requisition management systems licensed to corporations purchasing for their own use include ORION software (from Medical Management Systems), ENTERPRISE software (from ESI), and NOVA software (from Johnson & Johnson). Second, there exist systems provided by distributors for transmitting orders to them in proprietary formats. Such systems include QUICK-LINK (from Abbott), ASAP system (from Baxter) and LIGHTNING system (from Fisher Scientific). Third, software packages licensed by software developers to customers and/or suppliers enable the transmission of customer purchase orders as EDI purchase orders (in ANSI X.12 format). Examples of such systems include ON-CALL EDI (from TSI International), EDI Express software (from General Electric Information Services) and GETRAN software (from Sterling Software). Fourth, comprehensive business management packages such as REAL WORLD software (from Real World Corporation of Concord, NH) and ASK software (from The ASK Group) contain a purchasing module to create replenishment orders when inventoried items fall below restocking points. The same purchasing module can also be used to place spot orders for products keyed in by the customer's purchasing personnel.

None of these known requisition/purchasing systems (including Fisher RIMS), however, provides a capability for a user readily to search for and locate information about the products that may be requisitioned and ordered in connection with the requisition/purchasing system. They also do not provide the capability for a user to search a database containing two or more vendor catalogs, and then to transfer information about the items selected as a result of such

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searches into a requisition/purchasing system such as Fisher RIMS for building a requisition for the catalog items.

Computer systems that are capable of searching databases containing a product catalog of a particular vendor, for example on CD-ROM, are also known. Such systems can search for user requested information about products and create orders which the user can save, print or, in some cases, facsimile directly to a vendor. The known computer systems for searching vendor catalogs are limited in that only one such vendor catalog is accessible to a user at any given time. They are also limited in that they can only create an order within the particular vendor catalog database. They cannot source items to be requisitioned from a database containing multiple catalogs or interact with a requisition/purchasing system (such as Fisher RIMS) to create a purchase order or orders including the items located from that sourcing operation.

Thus, it would be desirable to provide an electronic sourcing system that provides a means for transferring information between a requisition/purchasing system that may use the results of a search of product information and a means for searching large volumes of product information such as would be included in a vendor product catalog or catalogs.

It would also be desirable to provide such an electronic sourcing system that is capable of searching a database containing at least two vendor product catalogs for product information.

It would further be desirable to provide such an electronic sourcing system that is capable of searching a database of catalog items contain in at least two vendor product catalogs, selecting particular items located, and transferring information about the items selected (for example, a catalog number and a vendor identifier, such as vendor name and/or vendor number) to a requisition/purchasing system for inclusion in a requisition generated by the system.

It would further be desirable to provide an electronic sourcing system that is capable of creating an order list including items located as the result of a catalog database search and transferring that order list of desired catalog items to a requisition/purchasing system for inclusion of the catalog items as entries in a requisition generated by the system.

SUMMARY OF THE INVENTION

In view of the foregoing, it is an object of this invention to provide an electronic sourcing method and system that provides a user with the capability of searching a database containing data (including product/vendor identification, and other product information) relating to items available from at least two vendor product catalogs, and the capability of transferring the product information for desired catalog items obtained as a result of the search to a requisition/purchasing system for use in generating a requisition including entries for the desired catalog items.

It is also an object of this invention to provide an electronic sourcing system that provides a means for bi-directionally transferring information between a requisition/purchasing system that may use the results of a search of such product information, and a means for searching large volumes of product information such as would be included in a vendor product catalog.

It is a further object of this invention to provide an electronic sourcing system capable of creating an order list including desired catalog items located as the result of such a database search, and transferring that order list to a

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Receipt Process data screen is set forth in Table XX.) This data screen enables the CSR to change the status of some or all of items received into receiving status to be received into stock status (and vice versa). If the CSR has arrived at this data screen from the T/O Receival data screen, the Modify Receipt Process data screen will already display at least the Transfer Order Number (ORD NBR), Receipt Number (RECV), line number (LINE), Part Number (PART NBR), QUANTITY STOCKED, QUANTITY IN RECEIVING and associated information. Otherwise, the CSR can call up this information by entering the relevant Transfer Order Number, Line Number and Receipt Number into the Modify Receipt Process data screen and hitting Enter, which will call up the associated data (such as the QUANTITY STOCKED).

The CSR can then transfer items from stock to receiving, or vice versa, by entering quantity to be transferred into the quantity field and entering an "S" or a "R" to identify the direction of the transfer. When this data has been entered, local computer 40 validates the entered data to determine if the transfer is possible (i.e., if there is a sufficient quantity of the item in the location from which the quantity is being transferred).

After this validation, the CSR may confirm the update by hitting the F10 key, which will cause local computer 40 to create and transmit an appropriate data block to host computer 10, and host computer 10 will repeat the updating and confirmation transmittal process discussed above in connection with the T/O Receivals data screen. When local computer 40 has received confirmation, it will update the status of the relevant fields of the Transfer Order Item Table and the Plant Location Table as needed.

Another option that may be selected from the Transfer Order List data screen is the Multiple Line Stock Receival data screen. (A sample Multiple Line Stock Receival data screen is set forth in Table XXI.) This data screen performs the same function as the T/O Receival data screen, except that multiple lines of a transfer order may be received. In the exemplary data screen shown in Table XXI, the CSR cannot receive items into receiving from the Multiple Line Receival data screen. The Multiple Line Receival data screen could easily be modified to permit reception into receiving by adding fields shown in the T/O Receival data screen.

The final option available from the Transfer Order List data screen is Transfer Order Close. This option is not normally needed as transfer orders are usually closed automatically when all of the items requested therein are received. This data screen is available to permit the CSR to open or close a transfer order in unusual circumstance. For example, a shipment might be received in response to a transfer order, and the order closed. But it may later be realized that the received items were a misshipment, and were not the ordered items. The CSR could then use this data screen to reopen the transfer order. As with the other data screens affecting the status of transfer orders, local computer 40 must first inform host computer 10 that it wishes to close or reopen a transfer order and wait for confirmation before the relevant records in local database 50 are updated.

Cross-Referencing

As described above, the preferred embodiment of the present invention may identify items to be requisitioned using several different part numbering systems. In addition to the Distributor's own catalog numbers, the vendors from which the Distributor will stock or order items may also have their own vendor part numbers. Moreover, the Customer may employ its own catalog of part numbers using a numbering system unique to that Customer. The Distributor,

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other distributors and the Customer will frequently use different identifying part numbers for items which are essentially equivalent, e.g., a 250 ml PYREX Griffin beaker, manufactured by Corning (who designates it as part number 1000 250) could have a Distributor's catalog number 02 540K and competitor's part numbers B2650250, 13912207, and 029827. Distributor and competitors may also have similar products from other vendors (e.g., a 250 ml KIMAX Griffin beaker from Kimble).

To address this situation, the preferred embodiment of the system of the present invention includes a Host Cross-Reference Table in host database 20 as well as a Local Cross-Reference Table in local database 50.

The Host Cross-Reference Table includes, for each item regularly stocked or supplied by the Distributor (i.e., items of product type 01 or 03) a list of the corresponding part numbers of Distributor's vendor and other distributors (which are identified by a competitor number) for items which have been determined to be equivalent. This relational database is created by the Distributor by, for example, reviewing the catalogs of other distributors and determining which items are equivalent to items in the Distributor catalog.

Additionally, as discussed above, host database 20 also includes a database of valid vendor codes and vendor part numbers for items which are not regularly supplied by the Distributor, but which the Distributor will order for shipment to the Customer (i.e., items of product type 04).

The CSR at local computer 40 creates the Local Cross-Reference Table in local database 50 using the Cross Reference Maintenance data screen 76 (shown in FIG. 2A), a sample of which is set forth in Table XVIII. The Cross Reference Maintenance data screen 76 can be reached by hitting the F5 (XREF MAINT) key from the Cross Reference Number List data screen 72, a sample of which is shown in Table XVII. The latter data screen permits the CSR to view portions of a list of cross reference numbers stored in the Local Cross Reference Table, as will be clear to one of ordinary skill in the art from Table XVII.

The CSR can then enter the Customer's part number in the CROSS REF NUMBER field, and the corresponding Distributor's catalog number in the CATALOG NUMBER field. Alternatively, the CSR may enter a catalog number of the vendor or another distributor in the CATALOG NUMBER field, and a corresponding vendor or competitor number in the VENDOR NUMBER field. The CSR must also enter a product type in the PROD TYPE field. Finally, the CSR must enter a unit of measure in the VEND UM field if the CATALOG NUMBER is that of a competitor.

Once the CSR has entered this information, he can hit the F6 (Add) key to add the entered data to the Local Cross Reference Table. Local computer 40 then creates a data block including the Customer's cross reference number, the associated catalog number (and a vendor number, if appropriate) and the product type. This data block is then transmitted to host computer 10 for validation.

If the product type is 01 or 03, host computer 10 validates the data in the received data block by accessing the Distributor product data on host database 20. If host computer 10 does not find the item in the Distributor product data, it then searches one or more Host Cross Reference Tables for the item. This process is similar whether it occurs in response to a data block received from the local computer 40 when operating under the cross-referencing program (as described here) or in response to a data block received from the local computer 40 during the sourcing process described